

REMARKS

The following remarks are in response to the Office Action of May 17, 2005, for which a one-month extension is hereby requested. The Office Action objected to but indicated the allowability of claims 48-52, 63-67, and 71-75 and rejected pending claims 2, 3, 47, 60-62, 68-70, and 81 rejected under 35 U.S.C. 102(b) as anticipated by Schwartz, U.S. patent number 4,823,391. For the reasons given below, it is respectfully submitted that claims 2, 3, 47, 60-62, 68-70, and 81 are also allowable over the prior art.

Rejections under 35 U.S.C. 102(b)

The Office Action rejected claims 2, 3, 47, 60-62, 68-70, and 81 under 35 U.S.C. 102(b) as anticipated by Schwartz. These rejection are believed to be in error for a number of reasons, a major reason being related to the Office Action's interpretation of "enclosure" as this word is used in the claims. Specifically, the Office Action is interpreting "enclosure" to be a room or similar sort of listening area. This is incorrect. As used in the pending claims of the present application, enclosure refers to a cabinet or housing (such as element 30 in Figure 3) that holds the speakers so that they can provide a sound environment in a listening area, such as a room (which the Office Action incorrectly equates with the "enclosure" of the claims), not so that they can provide a sound environment in the enclosure in which the speakers are themselves housed.

This distinction is found in the present application at, for example, page 8, line 26, to page 9, line 6, when the relevant terms have been italicized:

Figure 3 shows several aspects of the present invention in this embodiment. As in Figure 1, a listener 10 is located in front of a pair of speakers 13 and 14. The speakers are separated by a distance s from each other with their midpoint a distance D from the listener. This midpoint is taken as the origin of the reference coordinates (x,y) , with the X-axis extending as shown toward the primary *listening area*. The speakers 13 and 14 again receive the respective input from lines 15 and 16 and the initial audio information comes in on a number of lines 18. Unlike the prior art, the speakers are now in an *enclosure* 30 holding the matched speakers 13 and 14 in special housings with a joining mechanism that allows adjustment of the speaker spacing.

It is believed to be clear from both this passage and the rest of the present application that "enclosure", as used in the claims, refers to a structure (such as 30 in Figure 3) that holds the speakers, and that "enclosure" does *not* refer to the primary listening area as an enclosed area, such as a room. As can be seen from Schwartz's Figures 1 and 2, Schwartz uses two distinct speakers, each with its own enclosure. Schwartz neither teaches nor suggests both of these

speakers being contained in the same enclosure, as found in each of the pending claims. Consequently, on this basis alone a rejection of claims 2, 3, 47, 60-62, 68-70, and 81 under 35 U.S.C. 102(b) as anticipated by Schwartz is in error and should be withdrawn.

Each of these claims is also believed further allowable for a number of additional reasons. Concerning independent claim 3, this reads (with emphasis added) as:

3. A method for modifying the acoustic effect of an array of two or more speakers responsive to a plurality of audio input signals from one or more signal processors, wherein each of said speakers is comprised of one or more acoustic transducers and wherein said two or more speakers *are in the same enclosure*, the method comprising:

providing one or more parameters of *the physical relational characteristics of said speakers with respect to one another in said enclosure*; and
using at least one of said parameters to modify said audio input signals.

As discussed in the preceding paragraphs, this claim specifies that the “two or more speakers *are in the same enclosure*”[emphasis added], whereas the teachings of Schwartz are specific to the case of distinct, conventional speakers for each channel. Further, the speakers’ input signals are modified based on “parameters of *the physical relational characteristics of said speakers with respect to one another in said enclosure*” ”[emphasis added]; this is also not found in Schwartz, where the input signals for the speakers are adjusted based on changes to the *external environment* or listening area (which the Office Action incorrectly identifies with the “enclosure” of the claims). Schwartz has no disclosure of adjusting the speakers’ input based on their physical relational characteristics with respect to one another.

The teachings of Schwartz are all specifically directed as “adjusting the output of audio speakers to accommodate for *changes in the sound environment* [i.e., the listening area] for an audio playback system” (column 2, lines 5-7, emphasis added). As discussed above, this is distinct from the present invention in that it compensates for the physical environment into which the speakers are placed, rather than upon the physical relational characteristics of the speakers. (A previous Office Action that relied upon Schwartz was correct when it noted that “Microprocessor 16 processes information about the relative physical environment of the speaker”, however it was incorrect when it continued on with the parenthetical remark “including their relationship to each other”.) Consequently, claim 3 is believed further allowable over Schwartz for these reasons.

(It should be noted that, *in addition* to information about the enclosure, the present application *additionally* allows for inclusion of information about the external environment or listening area, as described on page 12, lines 18-21: “In a more general embodiment, other

information, say, related to room acoustics, such as distance to the rear front walls ...could also be supplied". However, this is not the primary aspect to which the presently elected claims are drawn, which, again, is the physical relational characteristics of the speakers with respect to one another *in their enclosure*, not the room or listening area in which they are situated.)

Additionally, it should be noted that Schwartz discloses "speaker assemblies 2 and 3 each having multiple transducers 5." As shown in Figures 2 and 3 of Schwartz, each of these speakers assemblies receive a *single audio input* from power amp 35, with the right speaker receiving the right channel's signal and the left speaker receiving the left channel's signal. In contrast, claim 3 recites "an array of two or more speakers *responsive to a plurality of audio input signals* from one or more signal processors, wherein each of said speakers is comprised of one or more acoustic transducers, [and] wherein said two or more speakers are in the same enclosure." As the added emphasis indicates, claims 2 and 3 require multiple audio inputs (such as, for example, both a left and a right signal) into the speakers of a single enclosure.

Therefore, claims 3 is further believed allowable for any of these reasons and it is respectfully submitted that a rejection of claim 3 under 35 U.S.C. 102(b) as anticipated by Schwartz is not well founded and should also be withdrawn.

Concerning claims 2 and 47, the Office Action notes that Schwartz uses a test routine. This is described beginning line 43 of column 6. However, this test routine is entirely directed at determining the characteristics of the *external environment* or listening area. (The routine is even called "Find_Env".) Schwartz has no disclosure of using either "the distances between said two or more speakers" or "the azimuthal alignment of said two or more speakers" to modify the speaker inputs. Consequently, claims 2 and 47 are believed further allowable for these reasons.

Concerning claims 60-62, these contain limitations similar to claims 3, 2, and 47, respectively. Consequently, they are similarly believed allowable for any of the reasons given above for claims 3, 2, and 47.

As for claims 68-70, these also contain limitations similar to claims 3, 2, and 47, respectively. In particular, the beginning of the preamble to independent claim 68 should be noted: "A method of producing a sound environment *in a listening area* from an array of two or more speakers mounted *in a shared enclosure* ...". As the added emphasis shows, the distinction between a "listening area" (which the Office Action incorrectly takes to

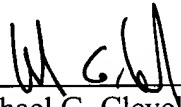
correspond to the "enclosure" of the claims) and the "enclosure" of the claims is perhaps even clearer in these claims as both terms are explicitly found there. Consequently, claims 68-70 are similarly believed allowable for any of the reasons given above for claims 3, 2, and 47.

Finally, claim 81 is a claim for a sound reproduction system drawn to the same aspects of the present invention as the independent method claims and is therefore believed allowable for any of the reasons given above for claim 3.

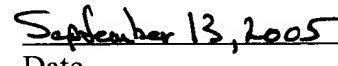
Conclusion

Reconsideration of claims 2, 3, 47, 60-62, 68-70, and 81 and an early indication of their allowance are earnestly solicited.

Respectfully submitted,



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